New Jersey Department of Transportation
Bureau of Research

Date of RFP 3/1/2013	**RESEARCH PROJECT Request for Proposals 2013 Program**	Closing Date 4/10/2013

Alternatives to Nuclear Density Testing

Project No. 2013-02

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals.* Please visit:
http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf
Revised Proposal Evaluation Forms are available for your information on the website.)

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES

The NJDOT currently uses nuclear density testing for acceptance of soil aggregates and dense graded aggregate base. See sections 203 and 302 of the NJDOT standard specifications. In recent years, the regulations revolving around nuclear devices have become increasing onerous and expensive. The NJDOT would like to consider alternative methods for accepting soil aggregate and DGA compaction. Consideration may be given to a wholesale change in the way that we approach the acceptance of these materials. In the past, there have been cursory studies of TDI and Humboldt stiffness gauges, but neither of these gauges worked in the framework of the NJDOT specification, so were not pursued. This research should consider the overall costs of a new method/system to ensure the quality of the soil aggregate / DGA installed on NJDOT projects. Also, to be considered is the speed of testing, accuracy, and precision of the testing method.

*identify alternatives while ensuring the quality of the soil aggregate/DGA installed on NJDOT projects
*compare speed of testing, accuracy and precision of the testing method.
*determine overall costs of a new method/system

2. TASKS

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.

PHASE I – Literature Search

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the PI will make a presentation to the Research Project Selection and Implementation Panel to discuss their findings, and to discuss the appropriate research approach.

PHASE II – Research Approach and Anticipated Results

Clear description of how you will solve the problem and implement anticipated findings. Work may be divided into phases (e.g., Laboratory, Field or Year 1, Year 2), as necessary, to clarify tasks. *Exit Criteria* must be developed during this phase.

3. IMPLEMENTATION AND TRAINING PLAN

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings, and as appropriate train these personnel in the use the project results.

The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.

4. DELIVERABLES:

[List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan.
- Technical Memorandum on the survey results
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required
- Quarterly Reports and Final report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, technical memorandum, draft final report and Final Report (plus 10 copies).
- The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel. The Final Acceptance will be granted upon receipt of ten copies of the approved final report.

5. CONTRACT TIME:

The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions.

A 12 - 24 months time frame would be preferred.

6. CONTACTS:

Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions are to be directed to Camille Crichton-Sumners by sending an e-mail to Camille.CrichtonSumners@dot.state.nj.us, or by phone (609-530-5966).

A meeting may be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding of the research needs. **This must be requested on or before March 9, 2013**.

7. DEADLINE

Proposals (10 single-bound copies) are due at the NJDOT Bureau of Research no later than 5:00 p.m. on 4/10/2013

Authorization to Begin Work: 6/3/2013 estimate

8. PROPOSAL DELIVERY INSTRUCTIONS:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:

2013 PROPOSAL-NJDOT
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